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Patent Application for:

USER SELECTIVE ADVERTISING

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9   **USER SELECTIVE ADVERTISING**
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14   **FIELD OF THE INVENTION**

15   This invention relates generally to the field of advertising. More particularly,

16 this invention relates to a method of enhancing the effectiveness of advertising

17 during playback of stored entertainment content.

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19   **BACKGROUND OF THE INVENTION**

20   Television advertising spots are typically in the form of commercial segments

21 ("commercials") in which the entertainment contents such as a television program

22 is periodically interrupted to present commercials to the viewer. As used herein,

23 the term content is intended to embrace television programming including

24 entertainment programming, movies, sporting events, news programs and

25 generally anything that would commonly be referred to as a television program.

26 This traditional technique for providing advertisements in the form of commercials

27 has varying levels of success in reaching the target viewing audience. Although

28 demographic and other tools can be utilized to match up appropriate advertising

29 with programming, often conventional commercials are not effective since the

1   viewer may take the opportunity of a commercial break to, for example, to get a

2   snack or use the restroom.

3   Recently, certain television broadcasters, cable networks and videotape

4   suppliers have utilized so-called "watermarks" to provide the user with a constant

5   reminder of the source of programming. Such watermarks are logos or insignias

6   that appear, for example, in the bottom right hand corner of a television image and

7   generally allow the image to show through the watermark while providing the

8   viewer with the ability to still clearly see the insignia or logo during most types of

9   video. Another type of advertisement has also become popular recently with the

10   advent of the Internet and the worldwide web. So-called banner ads, which may

11   take the form of a scrolling banner at the top, bottom or other location in the video

12   image (including an open window) provides text or video advertisement.

13   Unfortunately heretofore, the art of supplying a viewer with an appropriately

14   targeted advertisement has been totally out of the control of the viewer. This is true

15   both in the case of selection of advertisement as well as selection of advertising

16   mechanism. The present invention is intended to address this issue.

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19   **SUMMARY OF THE INVENTION**

20   The present invention relates generally to advertising. Objects, advantages

21   and features of the invention will become apparent to those skilled in the art upon

22   consideration of the following detailed description of the invention.

23   One embodiment of the present invention relates to an advertisement

24   method and apparatus in which a user is presented with a menu of advertisements

25   and/or advertisement types for selection. Upon selection of the desired

26   advertisement and/or advertisement type, advertisements are downloaded to the

27   user's set-top box storage for merging with entertainment content for presentation

28   to the user.

29   A method of advertising consistent with an embodiment of the invention

30   includes: presenting a menu of possible advertisements to a user to permit the user

1   to select an advertisement to view; receiving a user selection of an advertisement

2   to view; and merging the advertisement with the stored entertainment content so

3   that both the advertisement and the stored entertainment content are played back

4   or presented to the user.

5   An electronic storage medium containing instructions which, when executed

6   on a programmed processor carry out a process of advertising consistent with an

7   embodiment of the invention including: presenting a menu possible advertisements

8   to a user to permit the user to select an advertisement to view; receiving a user

9   selection of an advertisement to view; receiving the selected advertisement from

10 an advertising server; and merging the advertisement with the stored entertainment

11 content so that both the advertisement and the stored entertainment content are

12 played back or presented to the user.

13 A set-top box consistent with one embodiment of the invention includes a

14 programmed processor that presents a user with a menu of advertisements. A

15 user selection of a selected advertisement from the menu of advertisements is

16 received by the user. The selected advertisement is received from a service

17 provider. The content is also received from the service provider. The programmed

18 processor merges the entertainment content with the advertisement for

19 presentation to the user.

20 A method of advertising consistent with another embodiment of the invention

21 includes: presenting a menu of possible types of advertisements to a user to permit

22 the user to select a type of advertisement to view; receiving a user selection of a

23 type of advertisement to view; receiving an advertisement of the selected

24 advertisement type from an advertising server; and merging the advertisement with

25 the stored entertainment content so that both the advertisement and the stored

26 entertainment content are presented to the user.

27 An electronic storage medium containing instructions which, when carried

28 out by a programmed processor, implements a method of advertising consistent

29 with the present invention including: presenting a menu of possible types of

30 advertisements to a user to permit the user to select a type of advertisement to

1   view; receiving a user selection of a type of advertisement to view; receiving an

2   advertisement of the selected advertisement type from an advertising server; and

3   merging the advertisement with the stored entertainment content so that both the

4   advertisement and the stored entertainment content are presented to the user.

5   A set-top box consistent with another embodiment of the invention includes

6   a programmed processor that presents a user with a menu of advertisement types.

7   A receiver that receives a user selection of a selected advertisement type from the

8   menu of advertisements. The selected advertisement is received from a service

9   provider. The entertainment content is also received from the service provider. The

10   programmed processor merges the entertainment content with the advertisement

11   for presentation to the user.

12   An advertising method consistent with embodiments of the invention

13   includes: presenting a television viewer with a menu of advertisements from which

14   to select an advertisement for viewing; receiving an advertisement selection from

15   the television viewer; and presenting the television viewer with the selected

16   advertisement.

17   Another advertisement method consistent with embodiments of the invention

18   includes: presenting the television viewer with a menu of advertisement types;

19   receiving an advertisement type selection from the television viewer; and presenting

20   the television viewer with the selected advertisement according to the selected

21   advertisement type.

22   The above summaries are intended to illustrate exemplary embodiments of

23   the invention, which will be best understood in conjunction with the detailed

24   description to follow, and are not intended to limit the scope of the appended

25   claims.

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BRIEF DESCRIPTION OF THE DRAWINGS

The features of the invention believed to be novel are set forth with particularity in the appended claims. The invention itself however, both as to organization and method of operation, together with objects and advantages thereof, may be best understood by reference to the following detailed description of the invention, which describes certain exemplary embodiments of the invention, taken in conjunction with the accompanying drawings in which:

FIGURE 1 is a system block diagram of a system using a set-top box.

FIGURE 2 is a functional block diagram of a digital set-top box suitable for use with the present invention.

FIGURE 3 depicts a screen image of an advertisement menu consistent with certain embodiments of the invention.

FIGURE 4 depicts a screen image of a watermark advertisement consistent with certain embodiments of the invention.

FIGURE 5 depicts a screen image of a banner advertisement consistent with certain embodiments of the invention.

FIGURE 6 is a flow chart describing one embodiment of the present invention.

FIGURE 7 is a flow chart describing another embodiment of the present invention.

FIGURE 8 depicts a screen image of another embodiment of an advertisement menu and an advertisement type menu consistent with certain embodiments of the invention.

FIGURE 9 is a flow chart describing another embodiment of the present invention.

FIGURE 10 is a flow chart describing another embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will herein be described in detail specific embodiments, with the understanding that the present disclosure is to be considered as an example of the principles of the invention and not intended to limit the invention to the specific embodiments shown and described. In the description below, like reference numerals are used to describe the same, similar or corresponding parts in the several views of the drawings.

Referring to **FIGURE 1**, a block diagram for an exemplary interactive cable or satellite television (TV) system 100 is shown. The system 100 includes, at a head end of the service provider 10, a media server 12 for providing, on demand, movies and other programming obtained from a media database 14. The media server 12 might also provide additional content such as interviews with the actors, games, advertisements, available merchandise, associated Web pages, interactive games and other related content. The system 100 also includes an electronic programming guide (EPG) server 16 and a program listing database 18 for generating an EPG. Set-top box 22 can generally provide for bidirectional communication over a transmission medium 20 in the case of a cable STB 22. In other embodiments, bidirectional communication can be effected using asymmetrical communication techniques possibly using dual communication media - - one for the uplink and one for the downlink. In any event, the STB 22 can have its own Universal Resource Locator (URL) or IP address or other unique identifier assigned thereto to provide for addressability by the head end and users of the Internet.

The media server 12 and EPG server 16 are operatively coupled by transmission medium 20 to a set-top box (STB) 22. The transmission medium 20 may include, for example, a conventional coaxial cable network, a fiber optic cable network, telephone system, twisted pair, a satellite communication system, a radio frequency (RF) system, a microwave system, other wireless systems, a

1   combination of wired and wireless systems or any of a variety of known electronic

2   transmission mediums. In the case of a cable television network, transmission

3   medium 20 is commonly realized at the subscriber's premises as a coaxial cable

4   that is connected to a suitable cable connector at the rear panel of the STB 22. In

5   the case of a Direct Satellite System (DSS), the STB 22 is often referred to as an

6   Integrated Receiver Decoder (IRD). In the case of a DSS system, the transmission

7   medium is a satellite transmission at an appropriate microwave band. Such

8   transmissions are typically received by a satellite dish antenna with an integral Low

9   Noise Block (LNB) that serves as a down-converter to convert the signal to a lower

10   frequency for processing by the STB 22.

11   The exemplary system 100 further includes a TV 24, such as a digital

12   television, having a display 26 for displaying programming, an EPG, etc. The STB

13   22 may be coupled to the TV 24 and various other audio/visual devices 26 (such as

14   audio systems, Personal Video Recorders (PVRs), Video Tape Recorders (VTRs),

15   Video Cassette Recorders (VCRs) and the like), storage devices (e.g., hard disc

16   drives) and Internet Appliances 28 (such as email devices, home appliances,

17   storage devices, network devices, and other Internet Enabled Appliances) by an

18   appropriate interface 30, which can be any suitable analog or digital interface. In

19   one embodiment, interface 30 conforms to an interface standard such as the

20   Institute of Electrical and Electronics Engineers (IEEE) 1394 standard, but could

21   also be wholly or partially supported by a DVI interface (Digital Visual Interface -

22   Digital Display Working Group, www.ddwg.org) or other suitable interface.

23   The STB 22 may include a central processing unit (CPU) such as a

24   microprocessor and memory such as Random Access Memory (RAM), Read Only

25   Memory (ROM), flash memory, mass storage such as a hard disc drive, floppy disc

26   drive, optical disc drive or may accommodate other electronic storage media, etc.

27   Such memory and storage media is suitable for storing data as well as instructions

28   for programmed processes for execution on the CPU, as will be discussed later.

29   Information and programs stored on the electronic storage media or memory may

30   also be transported over any suitable transmission medium such as that illustrated

as 20. STB 22 may include circuitry suitable for audio decoding and processing, the decoding of video data compressed in accordance with a compression standard such as the Motion Pictures Experts Group (MPEG) standard and other processing to form a controller or central hub. Alternatively, components of the STB 22 may be incorporated into the TV 24 itself, thus eliminating the STB 22. Further, a computer having a tuner device and modem may be equivalently substituted for the TV 24 and STB 22.

By way of example, the STB 22 may be coupled to devices such as a personal computer, video cassette recorder, camcorder, digital camera, personal digital assistant and other audio/visual or Internet related devices. In addition, a data transport architecture, such as that set forth by an industry group which includes Sony Corporation and known as the Home Audio-Video Interoperability (HAVi) architecture may be utilized to enable interoperability among devices on a network regardless of the manufacturer of the device. This forms a home network system wherein electronic devices and Internet appliances are compatible with each other. The STB 22 runs an operating system suitable for a home network system such as Sony Corporation's Aperios™ real time operating system. Other operating systems could also be used.

The STB 22 includes an infrared (IR) receiver 34 for receiving IR signals from an input device such as remote control 36. Alternatively, it is noted that many other control communication methods may be utilized besides IR, such as wired or wireless radio frequency, etc. In addition, it can be readily appreciated that the input device 36 may be any device suitable for controlling the STB 22 such as a remote control, personal digital assistant, laptop computer, keyboard or computer mouse. In addition, an input device in the form of a control panel located on the TV 24 or the STB 22 can be provided.

The STB 22 may also be coupled to an independent service provider (ISP) host 38 by a suitable connection including dial-up connections, DSL (Digital Subscriber Line) or the same transmission medium 20 described above (e.g., using a cable modem) to, thus, provide access to services and content from the ISP and

1   the Internet. The ISP host 38 provides various content to the user that is obtained

2   from a content database 42. STB 22 may also be used as an Internet access

3   device to obtain information and content from remote servers such as remote

4   server 48 via the Internet 44 using host 38 operating as an Internet portal, for

5   example. In certain satellite STB environments, the data can be downloaded at

6   very high speed from a satellite link, with asymmetrical upload speed from the set-

7   top box provided via a dial-up or DSL connection.

8   While the arrangement illustrated in **FIGURE 1** shows a plurality of servers

9   and databases depicted as independent devices, any one or more of the servers

10 can operate as server software residing on a single computer. Moreover, although

11 not explicitly illustrated, the servers may operate in a coordinated manner under

12 centralized or distributed control to provide multiple services as a Multiple Service

13 Operator (MSO) in a known manner. Additionally, the services provided by the

14 servers shown in **FIGURE 1** may actually reside in other locations, but from the

15 perspective of the user of STB 22, the service provider 10 serves as a portal to the

16 services shown. Those skilled in the art will appreciate that the illustration of

17 **FIGURE 1** represents a simplified depiction of a cable system configuration shown

18 simply as service provider 10. The actual configuration of the service provider's

19 equipment is more likely to follow a configuration defined by the CableLabs

20 OpenCable™ specification. The simplified illustration shown is intended to simplify

21 the discussion of the service provider 10's operation without unnecessarily

22 burdening the discussion with architectural details that will be evident to those

23 skilled in the art. Those details can be found in the publicly available CableLabs

24 OpenCable™ specification or in the text "OpenCable Architecture (Fundamentals)"

25 by Michael Adams, Cisco Press, Nov. 1999.

26   Referring now to **FIGURE 2**, a typical system configuration for a digital set-

27 top box 22 is illustrated. In this exemplary set-top box, the transmission medium

28 20, such as a coaxial cable, is coupled by a suitable interface through a diplexer

29 102 to a tuner 104. Tuner 104 may, for example, include a broadcast in-band tuner

1   for receiving content, an out-of-band (OOB) tuner for receiving data transmissions.

2   A return path through diplexer 102 provides an OOB return path for outbound data

3   (destined for example for the head end). A separate tuner (not shown) may be

4   provided to receive conventional RF broadcast television channels. Modulated

5   information formatted, for example, as MPEG-2 information is then demodulated

6   at a demodulator 106. The demodulated information at the output of demodulator

7   106 is provided to a demultiplexer and descrambler circuit 110 where the

8   information is separated into discrete channels of programming. The programming

9   is divided into packets, each packet bearing an identifier called a Packet ID (PID)

10   that identifies the packet as containing a particular type of data (e.g., audio, video,

11   data). The demodulator and descrambler circuit 110 also decrypts encrypted

12   information in accordance with a decryption algorithm to prevent unauthorized

13   access to programming content, for example.

14   Audio packets from the demultiplexer 110 (those identified with an audio

15   PID) are decrypted and forwarded to an audio decoder 114 where they may be

16   converted to analog audio to drive a speaker system (e.g., stereo or home theater

17   multiple channel audio systems) or other audio system 116 (e.g., stereo or home

18   theater multiple channel amplifier and speaker systems) or may simply provide

19   decoded audio out at 118. Video packets from the demultiplexer 110 (those

20   identified with a video PID) are decrypted and forwarded to a video decoder 122.

21   In a similar manner, data packets from the demultiplexer 110 (those identified with

22   a data PID) are decrypted and forwarded to a data decoder 126.

23   Decoded data packets from data decoder 126 are sent to the set-top box's

24   computer system via the system bus 130. A central processing unit (CPU) 132 can

25   thus access the decoded data from data decoder 126 via the system bus 130.

26   Video data decoded by video decoder 122 is passed to a graphics processor 136,

27   which is a computer optimized to processes graphics information rapidly. Graphics

28   processor 136 is particularly useful in processing graphics intensive data

29   associated with Internet browsing, gaming and multimedia applications such as

30   those associated with MHEG (Multimedia and Hypermedia information coding

1 Experts Group) set-top box applications. It should be noted, however, that the

2 function of graphics processor 136 may be unnecessary in some set-top box

3 designs having lower capabilities, and the function of the graphics processor 136

4 may be handled by the CPU 132 in some applications where the decoded video is

5 passed directly from the demultiplexer 110 to a video encoder. Graphics processor

6 136 is also coupled to the system bus 130 and operates under the control of CPU

7 132.

8 Many set-top boxes such as STB 22 may incorporate a smart card reader

9 140 for communicating with a so called "smart card," often serving as a Conditional

10 Access Module (CAM). The CAM typically includes a central processor unit (CPU)

11 of its own along with associated RAM and ROM memory. Smart card reader 140

12 is used to couple the system bus of STB 22 to the smart card serving as a CAM

13 (not shown). Such smart card based CAMs are conventionally utilized for

14 authentication of the user and authentication of transactions carried out by the user

15 as well as authorization of services and storage of authorized cryptography keys.

16 For example, the CAM can be used to provide the key for decoding incoming

17 cryptographic data for content that the CAM determines the user is authorized to

18 receive.

19 STB 22 can operate in a bidirectional communication mode so that data and

20 other information can be transmitted not only from the system's head end to the

21 end user, or from a service provider to the end user of the STB 22, but also, from

22 the end user upstream using an out-of-band channel. In one embodiment, such

23 data passes through the system bus 130 to a modulator 144 through the diplexer

24 102 and out through the transmission medium 20. This capability is used to

25 provide a mechanism for the STB 22 and/or its user to send information to the head

26 end (e.g., service requests or changes, registration information, etc.) as well as to

27 provide fast outbound communication with the Internet or other services provided

28 at the head end to the end user.

29 Set-top box 22 may include any of a plurality of I/O (Input/Output) interfaces

30 represented by I/O interfaces 146 that permit interconnection of I/O devices to the

set-top box 22. By way of example, and not limitation, a serial RS-232 port 150 can be provided to enable interconnection to any suitable serial device supported by the STB 22's internal software. Similarly, communication with appropriately compatible devices can be provided via an Ethernet port 152, a USB (Universal Serial Bus) port 154, an IEEE 1394 (so-called firewire™ or i-link™) or IEEE 1394 wide port 156, S-video port 158 or infrared port 160. Such interfaces can be utilized to interconnect the STB 22 with any of a variety of accessory devices such as storage devices, audio / visual devices 26, gaming devices (not shown), Internet Appliances 28, etc.

I/O interfaces 146 can include a modem (be it dial-up, cable, DSL or other technology modem) having a modem port 162 to facilitate high speed or alternative access to the Internet or other data communication functions. In one preferred embodiment, modem port 162 is that of a DOCSIS (Data Over Cable System Interface Specification) cable modem to facilitate high speed network access over a cable system, and port 162 is appropriately coupled to the transmission medium 20 embodied as a coaxial cable. Thus, the STB 22 can carry out bidirectional communication via the DOCSIS cable modem with the STB 22 being identified by a unique IP address. The DOCSIS specification is publically available.

A PS/2 or other keyboard / mouse / joystick interface such as 164 can be provided to permit ease of data entry to the STB 22. Such inputs provide the user with the ability to easily enter data and/or navigate using pointing devices. Pointing devices such as a mouse or joystick may be used in gaming applications.

Of course, STB 22 also may incorporate basic video outputs 166 that can be used for direct connection to a television set such as 24 instead of (or in addition to) an IEEE 1394 connection such as that illustrated as 30. In one embodiment, Video output 166 can provide composite video formatted as NTSC (National Television System Committee) video. In some embodiments, the video output 166 can be provided by a direct connection to the graphics processor 136 or the demultiplexer / descrambler 110 rather than passing through the system bus 130 as illustrated in the exemplary block diagram. S-Video signals from output 158 can be similarly provided without passing through the system bus 130 if desired in other

1   embodiments.

2   The infrared port 160 can be embodied as an infrared receiver 34 as

3   illustrated in **FIGURE 1**, to receive commands from an infrared remote control 36,

4   infrared keyboard or other infrared control device. Although not explicitly shown,

5   front panel controls may be used in some embodiments to directly control the

6   operation of the STB 22 through a front panel control interface as one of interfaces

7   146. Selected interfaces such as those described above and others can be

8   provided in STB 22 in various combinations as required or desired.

9   STB 22 will more commonly, as time goes on, include a disc drive interface

10   170 and disc drive mass storage 172 for user storage of content and data as well

11   as providing storage of programs operating on CPU 132. STB 22 may also include

12   floppy disc drives, CD ROM drives, CD R/W drives, DVD drives, etc. CPU 132, in

13   order to operate as a computer, is coupled through the system bus 130 (or through

14   a multiple bus architecture) to memory 176. Memory 178 may include a

15   combination any suitable memory technology including Random Access Memory

16   (RAM), Read Only Memory (ROM), Flash memory, Electrically Erasable

17   Programmable Read Only Memory (EEPROM), etc.

18   While the above exemplary system including STB 22 is illustrative of the

19   basic components of a digital set-top box suitable for use with the present

20   invention, the architecture shown should not be considered limiting since many

21   variations of the hardware configuration are possible without departing from the

22   present invention. The present invention could, for example, also be implemented

23   in more advanced architectures such as that disclosed in U.S. Patent Application

24   Serial No. 09/473,625, filed Dec. 29, 1999, Docket No. SONY-50N3508 entitled

25   "Improved Internet Set-Top Box Having and In-Band Tuner and Cable Modem" to

26   Jun Maruo and Atsushi Kagami. This application describes a set-top box using a

27   multiple bus architecture with a high level of encryption between components for

28   added security. This application is hereby incorporated by reference as though

29   disclosed fully herein.

30   In general, during operation of the STB 22, an appropriate operating

system180 such as, for example, Sony Corporation's Aperios™ real time operating system is loaded into, or is permanently stored in, active memory along with the appropriate drivers for communication with the various interfaces. In other embodiments, other operating systems such as Microsoft Corporation's Windows CE™ could be used without departing from the present invention. Along with the operating system and associated drivers, the STB 22 usually operates using browser software 182 in active memory or may permanently reside in ROM, EEPROM or Flash memory, for example. The browser software 182 typically operates as the mechanism for viewing not only web pages on the Internet, but also serves as the mechanism for viewing an Electronic Program Guide (EPG) formatted as an HTML document. The browser 182 can also provide the mechanism for viewing normal programming (wherein normal programming is viewed as an HTML video window - often occupying the entire area of screen 26).

STB software architectures vary depending upon the operating system. However, in general, all such architectures generally include, at the lowest layer, various hardware interface layers. Next is an operating system layer as previously described. The software architectures of modern STB have generally evolved to include a next layer referred to as "middleware." Such middleware permits applications to run on multiple platforms with little regard for the actual operating system in place. Middleware standards are still evolving at this writing, but are commonly based upon Javascript and HTML (hypertext Markup Language) virtual machines. At the top layer is the application layer where user applications and the like reside (e.g., browsing, email, EPG, Video On Demand (VOD), rich multimedia applications, pay per view, etc.). The current invention can be utilized with any suitable set-top box software and hardware architecture.

In accordance with embodiments of the invention, the user is given various options regarding the type of advertisement as well as how the advertisement is presented. While the user still has to be presented with advertisements, he or she can exercise a preference for both advertiser and advertisement type. Referring back to **FIGURE 1**, in addition to media server 12, EPG server 16 and ISP host 38,

1	the service provider 10 includes an advertising server 56 that includes a database
2	of advertisements 58 for presentation to the ultimate viewer. Servers 12, 16 and
3	56 as well as ISP host 38 although shown as independent servers with
4	independent databases may be implemented in any suitable manner including
5	implementation on more or fewer computers than those illustrated. Moreover,
6	these servers generally operate in a coordinated manner to provide the services
7	described herein. The actual hardware configuration at the service provider head
8	end may differ substantially than that shown without departing from the present
9	invention.
10	Referring now to **FIGURE 3**, a screen image illustrating one embodiment of
11	the present invention is shown as 300 as it might appear on display 26. In this
12	embodiment, the user is presented with a plurality of possible advertisements
13	shown as 302 through 324 and is instructed by an instruction area 330 to select the
14	particular number of advertisements to be viewed during a presentation of
15	programming that follows. For example, in the example shown as 300, the user is
16	presented with 12 possible advertisements to be presented during a professional
17	soccer event and the user is given 30 seconds in which to select 5 of the
18	advertisements.
19	As shown, the available advertisements include advertisements for multiple
20	advertisers as well as multiple formats. Menu icons representing advertisements
21	302, 304 and 306 are, for example from the same advertiser with three different
22	advertisement types (conventional commercial segment, banner or watermark), but
23	other types of advertisements (e.g. panel advertisement that repeatedly pop up as
24	a window on the screen for several seconds) can also be used. Similarly,
25	Advertisement groups 312 and 314; 316 and 318; and 320, 322 and 324 depict
26	advertisements of varying types for the same advertiser. Conventional commercial
27	segment type advertisements are depicted by menu selection icons 302, 308, 310,
28	312, 316 and 320. Banner type advertisements are represented by menu selection
29	icons 304, 314 and 322. Watermark type advertisements are represented by menu
30	selection icons 306, 314, 318 and 322. Thus, for example, if the user selects 320,

1   a conventional commercial segment will interrupt the presentation periodically. If

2   the user selects menu icon 322, a banner advertisement will appear either during

3   presentation of the programming material or as a substitute for the commercial

4   segment during the time slot normally occupied by such a commercial segment.

5   Finally, if the user selects menu icon 324, a logo will be displayed as a watermark

6   throughout at least a portion of the programming. In this manner, the user can

7   select from among various advertisers and types of advertising to both optimize the

8   presentation of information to the viewer (because the viewer gets to select items

9   that might be of interest) as well as selecting the advertising mechanism. Thus, the

10   user can determine if he wishes to view a full advertisement, or view a less

11   intrusive form of advertisement such as a watermark.   The actual level of

12   intrusiveness of any particular type of advertisement depends upon a number of

13   factors including the size of a banner or watermark, etc.

14   The user, for example, may desire to see a full commercial message for

15   some advertisers and thus accept a 30-second or 1 minute (or more or less) of an

16   interruption in the programming content periodically. If, however, the user prefers

17   to view the content substantially uninterrupted, he may wish to trade off the

18   interruption time for a longer presentation of a banner advertisement or perhaps an

19   even longer display of a watermark type advertisement. It is contemplated, for

20   example, that a 30-second commercial interruption might be traded off for a longer

21   presentation (e.g. perhaps 5 minutes) of banners or an even longer presentation

22   (e.g. 20 minutes) watermark advertisement. In general, it is contemplated that

23   more intrusive advertisements can be shown for shorter times than more intrusive

24   advertisements.   In any case, the user has the option to select the preferred

25   advertising mechanism and perhaps more importantly, to not be bothered with

26   advertisements that are of no interest. Moreover, the service provider is given the

27   flexibility of providing varying types of advertisements for varying lengths of time

28   with perhaps differing charges to the advertiser.

29   The present invention can thus be implemented through use of the

30   programmed processor CPU 132 of set-top box 22 with the user making selections

1   of the appropriate advertisements utilizing remote control 36 to navigate through the

2   menu of advertisements shown in **FIGURE 3** (or any other suitable menu system).

3   When an appropriate advertisement is to be selected, it can be highlighted or

4   pointed to and selected using a select or enter key in the remote control 306. Upon

5   doing so, the selections can be shown on the screen by highlighting. A highlighted

6   selection is illustrated in menu selection representing advertisement 302, but the

7   selection can, of course, be otherwise noted as having been selected. If the user

8   fails to make appropriate selections, a default set of advertisements selected by the

9   service provider 10 are used instead. However, those advertisements can be

10   targeted using user profiles and other techniques.

11   In accordance with this embodiment, selected advertisements can be

12   provided to the user in a number of ways. For example, the advertisements can be

13   downloaded in parallel with the presentation of programming material by use of a

14   cable modem within set-top box 22 and stored in disc drive 172 until time for

15   presentation of any particular advertisement in any particular medium. Thus, a

16   watermark or a banner advertisement or a 30-second conventional commercial

17   could be stored in disc drive 172 (or in another disc drive attached to the set-top box

18   22 as, for example, in the case of a personal video recorder) and played back at

19   appropriate times either during a pause in the programming or by merging with the

20   content in another manner.

21   By way of example, the information needed to present a banner

22   advertisement or watermark can be downloaded to disc drive 172 and mixed with

23   the incoming video for playback on the user's television 24. In the case of a

24   commercial interruption, the video content being transmitted from the service

25   provider 10 can be cached locally so that real time presentation of the video is not

26   necessary. The content can include a marker whenever a certain type of

27   advertisement is to be displayed. In other embodiments, rather than downloading

28   the advertisements via the modem, the advertisements can be made available on

29   unused channels in the video stream for merging with the active video of the

30   entertainment content. Those skilled in the art will recognize many mechanisms

1   for providing the advertising content and the entertainment content and merging

2   these two elements together to create the final images displayed to the viewer.

3   Referring now to **FIGURE 4**, a screen image 400 displaying active video of

4   programming content is illustrated in which a watermark 424 corresponding to

5   selection 324 is illustrated. Although illustrated near the bottom right-hand corner

6   of the display image, this should not be considered limiting. It is contemplated that

7   the watermark may appear in other locations and, in fact, may move around the

8   screen image or appear at various times in different locations to provide for a more

9   effective presentation of the logo or other image used in the watermark.

10   Referring now to **FIGURE 5**, a screen image 500 again with active

11   entertainment content video playing simultaneously includes a banner style

12   advertisement 522 corresponding to selection 322 from screen image 300.

13   Although the banner advertisement appears at the lower portion of screen 500, it

14   could also appear within a window or a banner located anywhere on the screen.

15   One method for implementing the process just described is shown in

16   **FIGURE 6** as process 600. The process starts at 604 after which the user is

17   presented with a menu of advertisements at 610 such as the menu shown in

18   screen image 300. At 614, immediately upon presenting the user with the menu

19   of advertisements, a timer is initiated. In the example shown in screen image 300,

20   this timer might be a 30-second timer (and may be accompanied by an audible

21   alert to the user), but this is not to be considered limiting since any appropriate time

22   period can be used. At 618, during the time period when the timer is active, the

23   user selects the advertisers and/or types of advertisements to be presented and is

24   able to continue this process until 622 when the timer expires. Depending upon the

25   embodiment, the user's selection of advertisements may be sent back to the

26   service provider 10 or used at the set-top box 22 to carry out the process of the

27   present invention. In one embodiment, the advertisements are merged with the

28   entertainment content at the STB 22 for presentation to the user. In another

embodiment, the advertisements are merged with the content at the service provider head end for presentation to the user (e.g., in a pay per view environment).

When the timer expires at 622, the system (for example, the CPU 132 of set-top box 22 operating under program control) determines if the user selected the correct number of advertisements (in the example shown, the correct number is 5). If not, the processor within the set-top box or a processor at the service provider 10 makes selections of additional advertisements to present to the user at 630 (e.g. randomly or according to any suitable criterion). Once its total number of advertisements corresponding to the number needed for presentation during the entertainment content is selected either at 624 or 630, the entertainment content begins playing at 634. Possibly simultaneously, the advertisements are downloaded at 638 from the service provider either via a channel that is designated for download of advertisements or via cable modem (DOCSIS or Out Of Band modem for example).

At 644, the advertisements are merged with the entertainment content for play to the user until the end of the entertainment content is reached at 650. Once the entertainment content is completed at 650, control returns to 610 for presentation of the next menu of advertisements in one embodiment. In other embodiments the present technique may only be used in certain entertainment content. In this case the process ends after 650. Numerous variations to this process (including parallel processing, reordering of the process and other variations) will occur to those skilled in the art upon consideration of this invention, without departing from the invention.

Referring now to **FIGURE 7**, a method embodying an alternate embodiment of the present invention is illustrated as process 700 starting at 704. At 708 the user, for example using a dedicated button on remote control 36, activates a process to select advertisements. This causes the user to be presented with a menu of advertisements at 712, for example, for the current entertainment content being viewed. At 718, the user selects an advertiser and/or a type of advertisement that he or she wishes to view. Thus, the present embodiment operates to permit

1   the user to modify the current presentation of advertising content or make new

2   selections, for example, to see a previously viewed advertisement.

3   At 724, if the correct number of advertisements has not been selected,

4   control passes to 730 where the remaining advertisements required are selected

5   by the system as in the previous process. In either event, control passes from 724

6   or 730 to 734 where the entertainment content is started or continued and the

7   appropriate advertisements are downloaded at 738 either on a dedicated channel

8   for advertisements or downloaded via modem. At 744, the advertisements are

9   merged with the entertainment content for display to the viewer until done at 750.

10   At 750, when the content is completed, the user may be presented with an

11   additional menu of advertisements at 712 or the process may simply terminate until

12   the user again activates a selection on the remote control to enter stage 708.

13   Again, many variations of this process are possible within the scope of the

14   invention.

15   Referring now to **FIGURE 8**, a screen image 800 illustrates another

16   mechanism for selection of appropriate types of advertisement content. In this

17   embodiment, the user is independently or dependently presented with a menu of

18   types of advertisements as well as a menu of advertisements. In one embodiment

19   of the implementation of the current embodiment, a scrolling menu of icons 804 is

20   periodically presented to the user during the presentation of the entertainment

21   content. The presentation appears to the user much like a "tickertape" of

22   advertisement selections. The user can then make a selection from the scrolling

23   menu for the next advertisement to be presented. In addition, the user can be

24   presented with a menu of advertisement types from which to select for the next

25   advertisement. Thus, for example, using navigation tools available through the

26   remote control 36, the user might highlight the selection of advertisement 810 from

27   the scrolling menu 804 while selecting a banner, watermark, or in this case,

28   commercial advertisement from the window 814, depending on the level of

29   intrusiveness of the advertisement the user is prepared to accept.

1   At this point, it is contemplated that the screen would clear except for the

2   entertainment content. Upon reaching the next appropriate marker within the

3   entertainment content, a commercial segment or other type of advertisement will

4   be viewed for the advertiser identified in icon 810. The variation illustrated in

5   **FIGURE 8** is described as process 900 depicted in **FIGURE 9**. This process starts

6   at 904 after which the system begins to play content at 908. Prior to a time for

7   presentation of an advertisement, the user is presented with a menu of

8   advertisements at 912. At 918 the user selects an advertisement during the

9   presentation of the menu or else ignores the selection in which case the system

10 selects an appropriate advertisement at 930 by any suitable selection mechanism

11 (for example, rotation or targeted advertisement based on a user profile or content

12 profile or time of day.)

13 In either event, control passes from 918 or 930 to 934 where the

14 entertainment content continues while the appropriate advertisement is

15 downloaded from the advertisement server 56 at the service provider 10 at 938. At

16 944 the advertisement is merged with the entertainment content for playback to the

17 viewer until time for the next advertisement is reached at 950 at which point control

18 returns to 912 where a new menu of advertisements is presented to the user.

19 Many variations are possible without departing from the present invention. For

20 example, although the download of advertisements has been depicted as occurring

21 simultaneous with the play of entertainment content, the advertisements could be

22 downloaded at high speed prior to the beginning of play. In another embodiment,

23 the user's disc storage 172 (or other storage associated with the user's system)

24 can be used as a cache for a substantial body of advertisements. Thus, in some

25 situations, an advertisement may not need to be downloaded at all in order to

26 merge the advertisements with the entertainment content. In other embodiments,

27 advertisements can be embedded within the blanking interval of a conventional

28 analog television signal and played back after selection in accordance with any

29 suitable selection mechanism by the user. These and other variations will become

30 evident to those skilled in the art upon consideration of the present invention.

It is contemplated that the ability to present advertisements in a variety of ways to the user will impact the business methods of the service providers and/or networks so that the charges (made from the service provider or network to the advertisers) associated with presentation of advertisements can be impacted by the type of advertisement presented. Moreover, with experience and testing, it can be determined how the effectiveness of various types of advertisements compare so that fee structures and times for the various advertisements can be factored into the business model. For example, as previously noted, a 30 second conventional advertisement might be as valuable as a 5 minute banner advertisement or a 20 minute watermark. Thus, charges for advertisements can be adjusted to provide availability to businesses having smaller amounts of funds to spend on advertisement. Consider for example, a pool of 5 local advertisers that might advertise for one minute each as a banner advertisement at substantially reduced prices. Many variations are possible without departing from the present invention.

Those skilled in the art will recognize that the present invention has been described in terms of exemplary embodiments based upon use of a programmed processor. However, the invention should not be so limited, since the present invention could be implemented using hardware component equivalents such as special purpose hardware and/or dedicated processors which are equivalents to the invention as described and claimed. Similarly, general purpose computers, microprocessor based computers, micro-controllers, optical computers, analog computers, dedicated processors and/or dedicated hard wired logic may be used to construct alternative equivalent embodiments of the present invention.

Referring now to **FIGURE 10**, an alternative embodiment is illustrated as process 1000 starting at 1004 wherein a pay-per-view embodiment is illustrated in which the entertainment content and the advertisement is merged at the service provider. In this embodiment, the user selects a pay-per-view, video on demand or similar entertainment content selection at 1008. At 1012, the user is presented with a menu of possible advertisements as described previously. The user then selects advertisements from the menu at 1018, possibly within a given time limit

1   as described previously. If the user fails to do so within prescribed limits, the

2   system selects advertisements instead at 1030. In either case, the advertisements

3   are then merged with the entertainment content at 1044 at the service provider

4   (e.g., within media server 12) and the merged content is then presented to the user

5   at 1050 from the service provider. The process then returns at 1060. Those skilled

6   in the art will appreciate many variations in the present embodiment without

7   departing from the invention.

8   Those skilled in the art will appreciate that the program steps used to

9   implement the embodiments described above can be implemented using disc

10   storage as well as other forms of storage including Read Only Memory (ROM)

11   devices, Random Access Memory (RAM) devices; optical storage elements,

12   magnetic storage elements, magneto-optical storage elements, flash memory, core

13   memory and/or other equivalent storage technologies without departing from the

14   present invention. Such alternative storage devices should be considered

15   equivalents.

16   The present invention is preferably implemented using a programmed

17   processor executing programming instructions that are broadly described above in

18   flow chart form. However, those skilled in the art will appreciate that the processes

19   described above can be implemented in any number of variations and in many

20   suitable programming languages without departing from the present invention. For

21   example, the order of certain operations carried out can often be varied, portions

22   can be deleted or carried out in parallel, and additional operations can be added

23   without departing from the invention. Error trapping can be added and/or enhanced

24   and variations can be made in user interface and information presentation without

25   departing from the present invention. Such variations are contemplated and

26   considered equivalent.

27   While the invention has been described in conjunction with specific

28   embodiments, it is evident that many alternatives, modifications, permutations and

29   variations will become apparent to those skilled in the art in light of the foregoing

30   description. Accordingly, it is intended that the present invention embrace all such

1   alternatives, modifications and variations as fall within the scope of the appended

2   claims.

3   What is claimed is:

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